

Monday, August 08, 2016 11:01:13 AM

Page 1

Setup Start *NS1*

Stop *NS2*

16

Start Date: 8/12/2016 **Start Qty:** 16.00

Required Date: 8/18/2016 **Req'd Qty:** 16.00

16

Customer:

Reference:

Approvals: **Process Plan:** dm **Date:** 16/08/08

Tooling: _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
-----------------	---------------------

D3443 Rev C

0.00

100

100

BAND SAW

0.00

Bandsaw

Jeaspa Bandsaw

Memo

Cut blank 2.400 " long

0.16

110

1 10

HAAS CNC VERTICAL MACHINING #1

0.88

HAAS 1

HAAS CNC vertical machine #1

Memo

Machine as per Folio FA587 Rev: AA & Dwg D3443 Rev: C

0.00

120

120

QC2- Inspect parts off machine FAI/FAIB

0.03

QC

Quality Control

Work Order ID 149894

Monday, August 08, 2016 11:01:13 AM

149894

Page 2

Item ID: D3443-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Lug

Start Date: 8/12/2016 Start Qty: 16.00

16

Cust Item ID:

Required Date: 8/18/2016 Req'd Qty: 16.00

16

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00				16	0		49 9-89
130									
QC	Memo	0.05							16/09/12
Quality Control									
140	Identify as per dwg & Stock Location: _____	0.00				16	0		DAS 21 9-89
140									SEP 13 2016
Packaging	Memo	0.03							
Packaging	LOCATION: WA002								
150	QC21- Final Inspection - Work Order Release	0.00							16/9/13
150									
QC	Memo	0.27							
Quality Control									

DAS
21
9-89

SEP 13 2016

Picklist Print

Monday, August 08, 2016 11:01:39 AM

Page 1

Work Order ID: 149894

149894

Parent Item: D3443-1

D3443-1

Parent Item Name: Lug

Start Date: 8/12/2016

Required Date: 8/18/2016

Start Qty: 16.00

Required Qty: 16.00

Comments: A05.11.14New issueEC
IPP Rev:B Removed Tumbling 08-09-08 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174B2.500X1.250		Purchased		No		100	f	0.0000	0.2	3.368421		DAS 33 9-89	
M174B2 500X1 250									**				
17-4 SS BAR 2.500 x 1.250													

M135447

3.3'

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

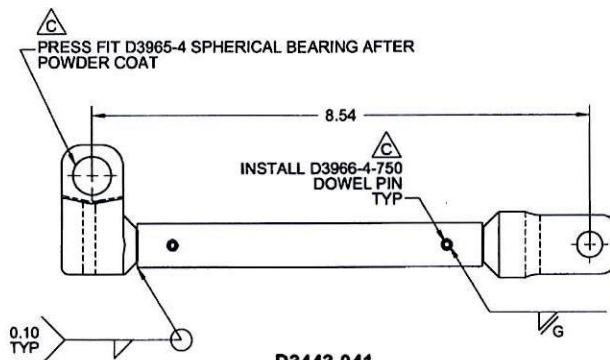
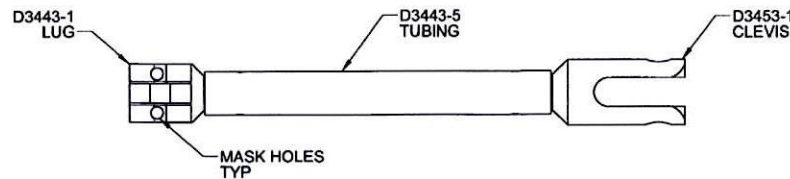
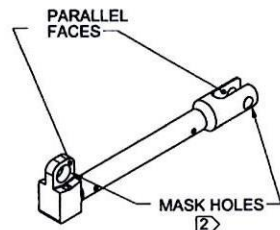
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

8 7 6 5 4 3 2 1



D3443-041

ITEM	QTY -041	P/N	DESCRIPTION
1	X	D3443-041	STRUT WELDMENT ASSEMBLY
2	1	D3443-1	LUG
3	1	D3443-5	TUBING
4	1	D3453-1	CLEVIS
5	1	D3965-4	BEARING, SPHERICAL
6	2	D3966-4-750	PIN, DOWEL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 149894

RELEASED
9/18/15 M

- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3
NO POWDER COAT IN HOLES
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N USING FINE POINT PERMANENT INK MARKER
 - 7) WEIGHT: 1.33 lbs
 - 8) WELD PER DART QSI 004

C	DRAWING UPDATED TO CURRENT STANDARDS. REVISED NOTE #2 (ZN A8-1, A8-2); 0.820 WAS 0.720 & 1.43 WAS 1.53 (ZN C2-3); 0.551 WAS 0.451 (ZN C1-3); RD 219 WAS RD 050 (ZN C4-3); D3965-4 WAS SPENNAUR P/N (ZN C6-1, B5-2); D3966-4-750 WAS MCMASTER-CARR P/N (ZN B5-1); REF PAR 09-018	RF	09.06.25
B	ADDED -9 PIN; REMOVED BALL PLUNGER; REVISE TOLERANCE; & Ø0.125 WAS #30	RF	05.12.05
A	NEW ISSUE	RF	05.09.02
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.06.25		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D3443** REV. C
SHEET 1 OF 4

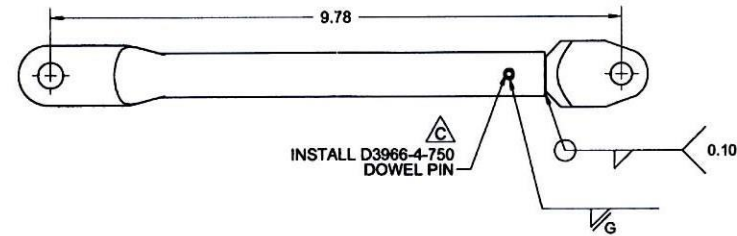
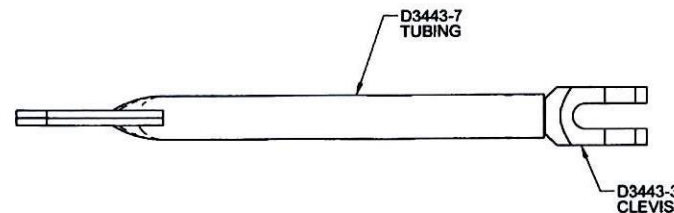
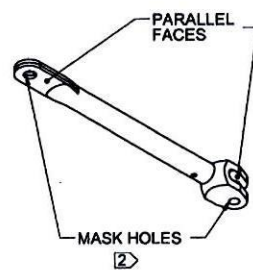
TITLE **STRUT WELDMENT ASSEMBLY** NTS
SCALE

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AUG 08 2016 *lm*

8 7 6 5 4 3 2 1

ITEM	QTY	P/N	DESCRIPTION
1	X	D3443-043	STRUT WELDMENT ASSEMBLY
2	1	D3443-3	CLEVIS
3	1	D3443-7	TUBING
4	1	D3966-4-750	PIN



D3443-043

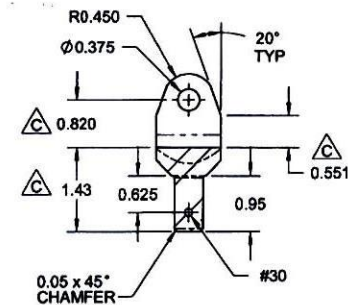
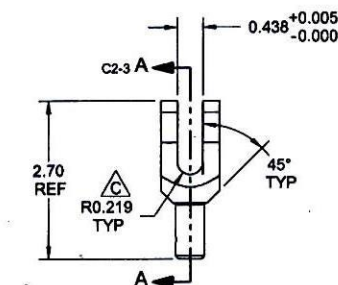
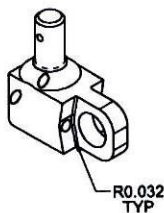
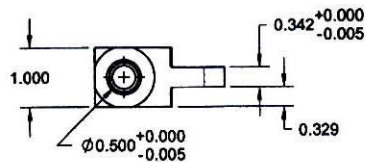
RELEASED
09/06/25/14

NOTES:

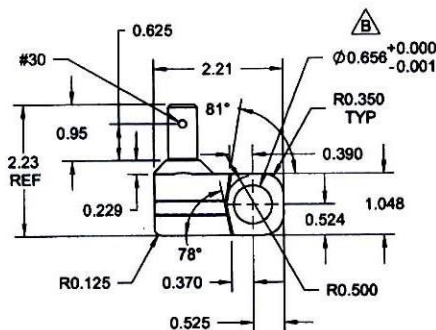
- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3
NO POWDER COAT IN HOLES
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.97 lbs
- 8) WELD PER DART QSI 004

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. C
MFG. APPR.		D3443	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		STRUT WELDMENT ASSEMBLY NTS	
DATE	09.06.25	COPYRIGHT © 2005 BY DART AEROSPACE LTD	
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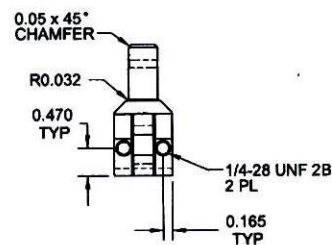
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SECTION A-A C4-3



D3443-1 LUG



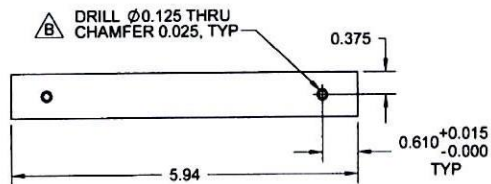
D3443-3 CLEVIS

RELEASED
07/08/25/11

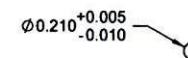
NOTES:

- 1) MATERIAL: D3443-1 = 17-4 SS PER AMS 5604/5643 (REF DART SPEC M17-4B)
D3443-3 = AISI 304 SS ROUND BAR (REF. DART SPEC M304R)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3443-1 = 0.50 lbs
D3443-3 = 0.35 lbs

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D3443	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		STRUT WELDMENT ASSEMBLY NTS	
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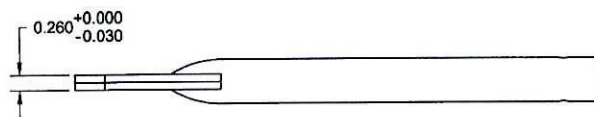
D3443-5 TUBING



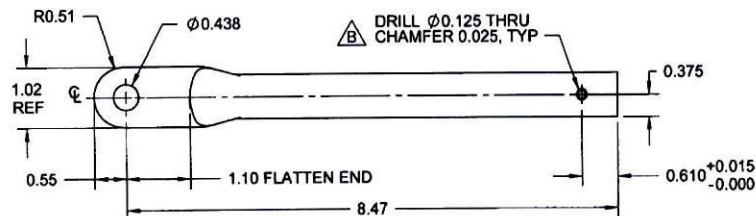
D3443-9 PIN

D3443-9 NOTES:

- 1) MATERIAL: DELRIN II 150R OR ACETRON GP ACETAL (REF. DART SPEC M-DELRIN-R)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A



D3443-7 TUBING



D3443-5/7 NOTES:

- 1) MATERIAL: AISI 316/304 SS SEAMLESS TUBING (REF. DART SPEC M304TR0.750W.120)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.025 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3443-5 = 0.41 lbs
D3443-7 = 0.62 lbs

RELEASED
01/25/25

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D3443	SHEET 4 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	STRUT WELDMENT ASSEMBLY NTS	
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D3065-5DART AEROSPACE LTD		Work Order:	149894
Description: Lug		Part Number:	D3443-1
Inspection Dwg: D3443 Rev: C		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.000	+/-0.010	.998	✓		SL10	Veru
0.342	+0.000/-0.005	.338	✓		SL02	Mic
0.329	+/-0.010	.330	✓		SL10	Veru
Ø0.500	+0.000/-0.005	.498	✓		SL02	
2.21	+/-0.030	2.214	✓		SL10	
Ø0.656	+0.000/-0.001	.6553	✓		SL02	
0.625	+/-0.010	.627	✓		SL10	
0.95	+/-0.030	.951	✓			
2.230	+/-0.010	2.230	✓			
0.229	+/-0.010	.230	✓			
0.370	+/-0.010	.375	✓			
0.525	+/-0.010	.523	✓			
0.524	+/-0.010	.523	✓			
0.390	+/-0.010	.395	✓			
1.048	+/-0.010	1.048	✓			
0.05 x 45°	+/-0.5°	.050 x 45°	✓			
R0.032	+/-0.010	.032	✓		Rad gauge	
0.470	+/-0.010	.468	✓			
0.165	+/-0.010	.164	✓			
1/4-28UNF	N/A	1/4-28 NF	✓			

Measured by:	DAS 20 9-89	Audited by:	DAS 49 9-89	Prototype Approval:	N/A
Date:	16-09-06	Date:	16/09/12	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.07.11	New Issue	KJ/JLM	
B	09.11.04	Dwg Rev updated	KJ	